UNIQUE PROCESS CHEMISTRY FOR ETCHING ORGANIC LOW-K MATERIALS

Abstract of the Disclosure

Method for etching a feature in an integrated circuit wafer with minimized effect of micromasking. The method introduces a flow of etchant gas including a fluorocarbon gas to the wafer, and uses the etchant gas to form a plasma in proximity with at least a portion of the wafer. The plasma is used to etch at least a portion of the feature in the wafer. Disassociation of the fluorocarbon into fluorine and hydrocarbon species performs two functions. The fluorine species prevents or significantly reduces sputtered hardmask components from depositing on the floor of the etched feature during etching. The hydrocarbon species acts to form a passivation layer on the sidewalls of the feature.